Injury Control Update

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Evidence builds: youth violence prevention programs working

Violence among America's young people remains at historically high levels, and both offenders and victims are getting younger each year. Yet aggressiveness, antisocial behavior, and violent crimes can all be prevented with early intervention—and the earlier the better, according to W. Rodney Hammond, PhD, director of NCIPC's Division of Violence Prevention (DVP) and codeveloper of the *Positive Adolescent Choices Training* (*PACT*) program (see article, page 13).

"Youth violence is a serious problem," he says, "but in public health, we have found good approaches to prevent it. The causes of youth violence lie in the way many youths respond to negative conditions in the environment. We now know we need a multipronged approach in which we not only teach youths appropriate responses but also focus on the environments that place youths at risk." He is encouraged by the variety of strategies being used by injury prevention programs across the country and by study findings indicating that some of these interventions are successfully curbing youth violence.

Continued On Page 6

Bicycle helmets: getting people to use them

"The issue is not 'proving' that bicycle helmets work to reduce injuries, but motivating people to wear them," maintains Jeffrey J. Sacks, MD, MPH, acting leader of the Home and Leisure Team in NCIPC's Division of Unintentional Injury Prevention (DUIP).

The facts are clear. Each year, hundreds of people die as a result of bicycle crashes and tens of thousands more are injured, some so severely that they are permanently disabled. The largest proportion of the population affected by bicycle-related injuries are children and adolescents. And these injuries are largely preventable if riders wear helmets. Some studies suggest that wearing a helmet reduces the likelihood of head injury by more than 75%.

Continued On Page 4

IN THIS ISSUE

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

CDC CENTERS FOR DISEASE CONTROL AND PREVENTION

Preschoolers adopt the helmet habit

Tykes on trikes are the latest recruits in the battle to reduce head injuries among children.

Although the image of helmeted preschoolers tooling about on their Big Wheels may evoke chuckles, the subject is serious. A recent review of pediatric trauma cases nationwide found that, although the tricycle set (those under 5 years of age) accounted for only a small proportion of kids with bike-related injuries, their injuries were just as severe as those of children aged 5–14 *[Powell EC, Tanz RR, DiScala C. Bicycle-related injuries among preschool children. Ann Emerg Med 1997; 30(3):260-5.]*. The study's authors recommended that the young cyclists wear helmets, both to prevent head injuries and to instill good habits early.

An innovative program in Washington State is demonstrating just how to do that.

"We know that bicycle-related head injuries are a leading cause of head injury for kids ages 5–14, so we wanted to establish a pattern of wearing helmets for these little kids who are on the verge of moving into the high-risk age group," said Ilene Silver, MPH, coordinator of the Washington State Injury Prevention Program.

The project targets low-income children who participate in Head Start and the Early Childhood Education and Assistance Program (ECEAP) and, indirectly, their older siblings and parents. Key components include the following:

- education for the kids and their parents about the importance of wearing helmets
- extensive training for preschool staff and family service workers
- a policy requiring all children to wear helmets when they ride wheeled vehicles at the preschool
- distribution of free bicycle helmets to the Head Start/ECEAP children and their siblings aged 5–14

By the end of the 3-year project this past September, more than 205 Head Start and ECEAP sites were participating, and more than 1,500 helmets had been purchased for use of preschoolers at these sites. In addition, more than 28,000 helmets were purchased for free distribution to the preschoolers and their siblings. Supplementing the CDC grant, the project received funding from the Washington Traffic Safety Commission, the Preventive Health Block Grant, and the Maternal and Child Health Block Grant to purchase the helmets.

Program incorporates multiple dimensions

The project involved far more than a helmet giveaway, Ms. Silver emphasized. Training via interactive video teleconferences helped introduce the program to staff and provided tips for the proper fitting of helmets and for creative safety events. A video on how to fit a helmet was part of the training, and copies also were provided to each agency to show teachers

and parents the correct way to measure and fit helmets.

Photo courtesy of Scott Terrell, Skagit Valley Herald

Wheeling their way through makeshift intersections and obstacle courses, children from the Burlington Head Start program in Washington State learn the importance of wearing bicycle helmets and watching for traffic.

The education and helmet giveaway efforts culminated at each site with a "bicycle rodeo," modified from the typical safety event for older riders, which teaches older kids how to ride safely in traffic. "The little kids were really learning safe pedestrian activities, only on trikes," Ms. Silver explained. A favorite activity was the "driveway ride-out." The youngsters maneuvered their wheeled vehicles down a path marked with orange safety cones and learned to stop and look both ways at the end before proceeding. Parents and siblings helped develop props that represented potential hazards for kids approaching the end of a real driveway, such as cars or shrubs that could hide a dog or pedestrian.

"The kids really loved these 'rodeos,'" said Ms. Silver, "and it provided a great way to involve the parents and older siblings. Moreover, the events drew good coverage in the local press, which could help pave the way for future funding at the local level."

More than fun and games

All the fun and games resulted in solid injury prevention, too. Observed helmet use among the preschoolers increased from 40% to 88% in the second year of the project (the last year for which data were available). Moreover, parents reported that the proportion of preschool children who "always" wear helmets increased from 43% at baseline to 64% after the helmet program was implemented.

None of this success could have happened without the creative input at the local level and the support of the Head Start and ECEAP directors, said Ms. Silver. The initial idea for focusing on a preschool population came from a county health educator, Becky Martin from Snohomish County. She had developed a program with a minigrant from a previous CDC state capacity-building grant, and the Head Start/ECEAP project extended her idea statewide.

"The best ideas come from people at the local level," said Ms. Silver. "They are really committed and have a fountain of good ideas. We can help by getting seed dollars and providing a forum to share ideas about what works." ■

Bicycle Helmets (continued)

Prevention potential

A recent study published by Dr. Sacks and others at NCIPC found that each year in the United States, an average of 247 children and adolescents die from traumatic brain injuries sustained in bicycle crashes, and another 140,000 are treated for head injuries. Had these riders worn helmets, as many as 184 deaths and 116,000 head injuries might have been prevented, according to the researchers, who used surveillance information from selected emergency rooms and national multiple cause-of-death data. *(Sosin DM, Sacks JJ, Webb KW. Pediatric head injuries and deaths from bicycling. Pediatrics 1996;98:868-70)*

Employing such a simple, relatively low-cost intervention should be a given for the injury prevention world. And it does appear that helmet use is increasing, especially in states and communities with mandatory helmet use laws. But the proportion of riders who regularly wear a helmet before setting out for a bicycle ride still is far below the national year 2000 objective of 50%. A recent telephone survey found that only a quarter of children 5–14 years old are reported to wear helmets regularly. *(Sacks JJ, Kresnow M, Houston B, Russell Bolen J. Bicycle helmet use among U.S. children. Inj Prev 1996;2:258-62).*

The same survey found that young adults had an even more dismal record. Only about 20% of adults said they wore a helmet while cycling, but riders aged 18–24, the group that had the highest proportion of bike riders for any adult age group, had the lowest rate of helmet use: 5.1%. *(Russell Bolen J, Kresnow M, Sacks JJ. Reported bicycle helmet use among adults in the U.S., 1994. Arch Fam Med 1998 [in press]).*

Making helmet use a "norm"

With the life-saving benefits of helmets so apparent, why don't all bicycle riders wear one?

"Every time you get on a bicycle, you have to make a decision to wear a helmet," said Dr. Sacks. Many barriers work against that choice, especially for children and adolescents, but the main one is that it is not a "social norm" in most communities. In other words, it's not the "cool" thing to do.

Reasons that young riders give for not wearing helmets include never thinking about it, not perceiving a risk from bicycling, discomfort, expense, and a feeling that helmets are unattractive. "Peer pressure and the fear of being labeled 'different' are strong motivations for nonuse," according to a DUIP report.

No single approach is likely to overcome these complex behavioral barriers, said Dr. Sacks. Rather, a multifaceted approach has shown promise in several demonstration programs. "More is better in this case," said the NCIPC scientist. "The more pathways you use to motivate compliant behavior, the more likely you are to be successful in the long run."

Nine states have just completed 3-year NCIPC-funded projects to promote bicycle helmet use and evaluate program effectiveness. The experience of these projects points to several elements that seem to make a difference, according to DUIP:

- **Mandatory helmet use legislation appears to provide a prompt and substantial increase in helmet use.** This approach can double the helmet use rate in a short period of time.

National Bicycle Safety Network promotes safe riding

Twenty national organizations are working together to encourage expanded and safer bicycling. The National Bicycle Safety Network was formed 3 years ago as a subcommittee of the Advisory Committee for Injury Prevention and Control. The cochairs are Richard Schieber, MD, MPH, with DUIP's Home and Leisure Team, and Maria Vegega, PhD, of the National Highway Traffic Safety Administration. Member organizations represent other federal agencies, nonprofit organizations, advocacy groups, and consumer associations.

The network has two main purposes:

- assist the nation in reaching the year 2000 objective of 50% bicycle helmet use
- increase the safe use of bicycles as an alternative means of transportation

The network's first major project is development of an Internet web page to serve as a common starting point for people seeking information on bicycle safety and use. There will be Hypertext links to partners' web pages and contact information for organizations without web pages. The network's Internet address is www.cdc.gov/ncipc/bike.

Photo from Digital Stock

One of the big reasons that people don't wear bike helmets consistently says NCIPC's Dr. Jeffrey Sacks is that it requires a conscious decision "every time you get on a bicycle."

Currently, 15 states and numerous local communities have such legislation, suggesting substantial potential for improvement.

- **A sustained multifactorial approach is more successful than any single approach.** Many effective programs incorporate information and education, helmet giveaway programs, and efforts to pass helmet use laws or vigorously promote their enforcement. Components of such an approach include involving local coalitions and forging public and private partnerships between public health departments, health care providers, schools, businesses, and community-based groups.

- **Each community is unique, and programs to promote helmet use must be tailored to local concerns and resources.** There is no single template for a successful program; instead each local effort should take into account its own community needs, social norms, and characteristics.

NCIPC activities promote bicycle helmet use

Grants to support state programs yield rich results. (Examples of how two state-based programs carved out unique approaches are included in the stories beginning on pages 2 and 17.) NCIPC has just awarded funds to support five new 3-year programs promoting helmet use among children 5–12 years of age. The newly funded states are California, Colorado, Florida, Oklahoma, and Rhode Island.

In addition to supporting state and community demonstration projects, NCIPC has funded both biomechanical research on bicycle helmets and evaluation of various aspects of bicycle safety, including the impact of helmet laws. Several of the NCIPC-funded injury control research centers, including Harborview Medical Center in Seattle and Johns Hopkins University in Baltimore, have focused on bicycle-related injuries.

NCIPC also conducts surveillance on bicycle-related injuries, carries out special studies, and develops and disseminates related information. Underscoring the importance of well-conducted evaluation, the center is in the process of developing a manual to help local programs conduct observational studies on helmet use.

Altogether, Dr. Sacks is encouraged by various signs of improvement in the efforts to prevent bicycle-related deaths and injuries. "We are moving in the right direction." he said. "Helmet use is up, and programs are showing success. A number of challenges remain, but we have a good sense of what to do. The issue is one of getting enough resources to do the job." ■

EVIDENCE BUILDS (continued)

Injury control experts agree that the problem of youth violence is too involved to be solved with any one approach. A child's tendency toward violence is affected not only by families, peers, and the school environment, but also by social factors such as access to drugs and a lack of job training and opportunities for employment. "Because the problem is complicated, it's going to take a lot of different types of interventions, each of which will make a small contribution," explains Kenneth E. Powell, MD, former associate director for science at DVP. "We don't want to miss an opportunity to put all of these small contributions together and use them to make a larger impact."

Early childhood interventions—for example, programs to improve adults' parenting skills or activities to help preschool children overcome problems with persistent antisocial behavior—are promising because they lay a foundation that will help deter violence during adolescence. Moreover "We've got to do more to make homes a safer place, and we need to help parents deal with relationship issues that kids observe in the home that can promote violence or detract from kids' ability to avoid it," Dr. Hammond says.

"Violence prevention also has to take place in many other settings," adds Dr. Hammond. "To deal with violence in the population, you have to have interventions in the schools and out in the community—for example, in youth development programs, recreational centers, church groups, and wherever kids are," he explains. "We also need to get out into the broader community by dealing with issues such as unemployment, high crime areas, and the need for partnerships between law enforcement and community members."

It is not enough, though, just to put different types of programs in place. They need to be scientifically evaluated to determine whether they are working, what positive outcomes they have produced, whether they are cost-effective, and what circumstances are needed for them to succeed.

NCIPC has supported 18 evaluation projects, the latest of which are to be completed in 1999. Four of these projects are evaluating programs that aim to create positive social environments for young children and their families. Other projects are evaluating interventions to prevent and reduce aggressive and violent behavior among youths. The following three projects, past recipients of NCIPC funding, have undergone full or partial evaluation, with encouraging results.

PeaceBuilders

PeaceBuilders is a school-based program described by Dennis D. Embry, PhD, whose research led to the program's creation, as more "a way of life" than a curriculum. It was designed for children in grades K–5, and its activities are built into the school environment and into daily interactions among students, teachers, and other staff. *PeaceBuilders* is based on scientific evidence that children who grow up to commit acts of violence exhibit cognitive, social, and imitative differences from their peers—differences that can best be ameliorated at an early age, says Dr. Embry, who serves as chief executive officer of Tucson-based Heartsprings, Inc.

The program teaches the children, their peers, and adults at school and at home specific ways to reduce aggression and hostility in their lives. At *PeaceBuilders* schools, children learn five principles: praise people, avoid put-downs, seek wise people as advisors and friends, notice and correct hurts we cause, and right wrongs.

Photo courtesy of Heartsprings, Inc.

Being recognized as PeaceBuilder of the Day instills pride in schoolchildren and is just one example of how the PeaceBuilders program reinforces positive behavior at school.

The young students are given plenty of opportunities to rehearse positive behavior and rewards for practicing such behavior, Dr. Embry explains. For example, during recess children may take turns being Peace Coaches who praise other children for sharing or inviting other students to play with them. After the last recess, children can write each other praise notes for display on the school's Peace Board.

According to an evalution conducted by Daniel J. Flannery, PhD, of Kent State University, the program has had some positive results. Three to five months into the program, nine Tucson *PeaceBuilders* schools showed a 10% decline in fighting-related injuries. During the same period, fighting-related injuries increased 56% in control schools. Another good example of the program's success, says Dr. Embry, is an elementary school in San Bernardino, California, where in the year before *PeaceBuilders* began, 120 children were

suspended and about 30 were arrested for crimes in the community. Two years into *PeaceBuilders*, the number of suspensions had dropped to five, and there were no arrests for community crimes.

The strength of *PeaceBuilders* is that it is based on scientific research, yet it is accessible and easy for children, teachers, and parents to understand, according to Dr. Embry. "And it's very portable. We started *PeaceBuilders* in 1993 in nine elementary schools. It's now in about 400 schools nationally. It grows at a rate of five to ten schools a week. And it's poised to become a national program in Australia."

Second Step

Evaluation of a program in Seattle schools, *Second Step: A Violence Prevention Curriculum*, showed modest success in reducing aggressive behavior and increasing positive social behavior among second and third graders. At the same time, it showed that school-based programs can be evaluated using randomized controlled trials, which are generally considered the most scientifically rigorous method of testing.

Second Step is based in the classroom and teaches empathy—students learn to identify their feelings and those of others; impulse control—they learn behavioral skills and a strategy for solving problems; and anger management—they learn a strategy for coping with anger and behavioral skills to help them in tense situations. Although the program is designed to be implemented schoolwide, limited funding dictated that only a few classrooms in each of the 12 participating schools take part.

Teachers from these classrooms underwent two days of training before the program began in December 1993. The children in the *Second Step* group received one or two 35-minute lessons each week, totaling 30 lessons. These children and those in the control group were then observed by teachers, parents, and trained observers, with varying results.

Parents and teachers noticed little change in the children's behavior in the classroom or at home, whereas the trained observers, who were not told the study's purpose, noticed significant changes in behavior on the playground and in the cafeteria. The trained observers saw physically aggressive behavior decrease significantly more and neutral and positive social behavior increase significantly more among children receiving the curriculum than among those in the control group. Most of these effects were evident six months after the intervention ended.

The principal investigator David C. Grossman, MD, MPH, of Harborview Injury Prevention and Research Center, offers several possible explanations for these differing observations: Teachers may have been less aware of aggressive behavior outside the classroom and, therefore, less likely to notice changes. Parents may have noticed little change because the children may have been better behaved at school than at home.

Another possible explanation is that the instruments that evaluators used to measure changes in behavior may not have been sensitive to change. "Or parents and teachers may have fixed impressions that are slow to change," he suggested. Dr. Grossman also wonders how the results would have differed if the program had included the parent's component, which was not yet available; if the *Second Step* curriculum could have been implemented in the whole school; and if students had received continued reinforcement.

SAGE

African American boys 12–16 years of age were the focus of the *Supporting Adolescents with Guidance and Employment (SAGE)* program in Durham, North Carolina. The community-based program included an eight-month African-American Rites of Passage program, which consists of adult mentoring, culture and history lessons, and manhood and conflict-resolution training; a six-week summer employment component; and a 12-week entrepreneurial experience.

SAGE was based on the assumption that various risk factors—such as blocked educational and employment opportunities, a lack of ethnic pride, single-parent families, and low household income—may increase an African-American teenagers' likelihood of engaging in violent behavior. *SAGE* was developed in 1992 by the Durham Business and Professional Chain (The Chain), the City of Durham Employment and Training Office, and the Durham County Health Department.

The program is undergoing a process and outcome evaluation, conducted by staff from the Research Triangle Institute, University of North Carolina, and North Carolina State University. The preliminary findings are somewhat promising, reports project evaluator Mallie J. Paschall, PhD. "In three areas—carrying weapons, selling illicit drugs, and using alcohol—our program seems to have made a difference. But we are seeing no effect on fighting behavior," he notes.

Dr. Paschall adds that youths participating in the Rites of Passage program have shown minimal improvement in four areas: increased ethnic pride, improved self-esteem, a more optimistic outlook on the future, and a lessening of the belief that aggression is socially acceptable and expected behavior.

Community support was essential to evaluating the intervention, says Dr. Paschall. But gaining the community's trust and support was not easy. After sitting down and talking with members of the community to answer their questions and address their fears, the level of acceptance increased. "They realized," says Dr. Paschall, "that we were listening to people and not just crunching numbers—that the results would be important to improving and continuing *SAGE*."

Advice for program planners

When developing a strategy to prevent youth violence, planners should consider a wide array of issues before investing in a curriculum or program. *Injury Control Update* staff asked Dr. Powell and two other NCIPC experts in youth violence prevention for their views on these considerations:

- **First, carefully consider what you really want to accomplish.** "Start with a realistic framework and be fairly specific to keep focused. Don't just say, 'We're going to prevent youth violence,'" advises Dr. Powell.

- **Before purchasing curriculum or program materials, make sure the intervention has been evaluated and shown to be effective.** "Teachers, school administrators, and other decision makers need to know what works," emphasizes James A. Mercy, PhD, DVP's associate director for science. "This is the information that will help them make rational decisions about what types of interventions will most likely reduce violence."

- **Next, consider how easily a curriculum or program will translate to the target population,** recommends Lloyd B. Potter, PhD, MPH, leader of DVP's Youth Violence/Suicide Prevention

CONTINUED ON PAGE 11

Seven Characteristics of Promising School Violence Prevention Programs

After extensively reviewing school-based programs to prevent violence, the U.S. General Accounting Office identified the following seven characteristics as being associated with the most promising interventions:

- **Comprehensive approach.** These programs recognize violence as a complex problem that requires a multifaceted response. Consequently, they address more than one problem area and involve a variety of services that link schools to the community.

- **Early start and long-term commitment.** There is a focus on (1) reaching young children to shape attitudes, knowledge, and behavior while they are still open to positive influences, and (2) sustaining the intervention over multiple years (for example, from kindergarten through 12th grade).

- **Strong leadership and disciplinary policies.** Leadership is strong at the school level. Principals and school administrators need to sustain stable funding, staff, and program components, and, most important, they must collaborate with others to reach program goals. In addition, student disciplinary policies are clear and consistently applied.

- **Staff development.** Key school administrators, teachers, and staff are trained to handle disruptive students and mediate conflict as well as understand and incorporate prevention strategies into their school activities.

- **Parental involvement.** The schools seek to increase parental involvement in reducing violence by providing training on violence prevention skills, making home visits, and enlisting parents as volunteers.

- **Interagency partnerships and community linkages.** The schools seeks community support in making school antiviolence policies and programs work. To accomplish this, they develop collaborative agreements in which school personnel, local businesses, law enforcement officers, social service agencies, and private groups work together to address the multiple causes of violence.

- **Culturally sensitive and developmentally appropriate materials and activities.** Program materials and activities are designed to be compatible with (1) students' cultural values and norms by using bilingual materials and culturally appropriate program activities, role models, and leaders, and (2) participants' age and level of development.

From: U.S. General Accounting Office. School safety: promising initiatives for addressing school violence. Washington, DC: US General Accounting Office, 1995.

EVIDENCE BUILDS (continued)

Team. For example, is the curriculum culturally appropriate for the target group? Will it work in your setting and environment, whether it be a school, church, or the home?

- **Make sure your institution is ready to conduct the intervention.** Are the necessary funds available? Do you have the necessary staff? Do you have the time required to develop and conduct the intervention? "When institutional readiness isn't there, you can have the best curriculum, but the program just won't work," Dr. Potter cautions.
- **Make sure all of the appropriate people and organizations support the project and want to be involved.** "For example," says Dr. Powell, "if the intervention has a summer job component, you will need the support of local employers."
- **Finally, gather as much information that is available about the type of approach you plan to use.** "Draw upon the experiences of others, but also recognize the unique characteristics of your own community," Dr. Powell suggests. ■

Federal report urges support for poison control centers

[LATE BREAKER: On October 28, as* Injury Control Update *went to press, Secretary Shalala approved and forwarded to Congress the report of the Advisory Committee for Injury Prevention and Control.]

In December 1993, members of an Oregon family suffered severe respiratory symptoms after using a new type of leather cleaning spray. An alert poison control center director notified colleagues nationally and set in motion a response to the potential crisis. Within four hours, the manufacturer had voluntarily recalled the aerosol cleaner, and stores throughout the country were directed to remove the product from their shelves. During that same period, 550 reports of lung injury and illness attributable to the leather spray had come in from 17 other states around the country.

Poison control centers—linked through the Toxic Exposure Surveillance System (TESS) of the American Association of Poison Control Centers (AAPCC)—have prevented or restricted public health catastrophes such as the leather spray episode for a long time now. Perhaps the best remembered incident took place some years ago when tamper-proof packaging was instituted after a poisoning was traced to Tylenol™ laced with cyanide. Every day, poison control centers are only a phone call away for a frantic parent or caregiver seeking help after a child swallows a toxic substance.

However, dwindling funds have jeopardized the capacity of poison control centers to provide adequate coverage to the U.S. population. This funding crisis was the catalyst for a report, developed by the Secretary's Advisory Committee for Injury Prevention and Control, that chronicles the precarious and haphazard funding history of poison control centers over the past two decades.

According to Dr. Richard Weisman, past president of the AAPCC, poison control centers are customarily "unwanted step-children" with no single organization taking ownership or responsibility for them within the public health system. The number of centers in the United States has declined steadily over the last two decades, and the remaining centers are in a constant budget crunch. Prevention activities especially have been slashed from centers' budgets, even though many preventive measures are quite inexpensive.

Although a public health program strapped for money is not a new story, this particular funding crisis has drawn attention because cutbacks at poison control centers seem certain to push medical costs even higher. The average cost from a poisoning exposure call is $31.28, while the average cost if other parts of the medical care system are involved is $932, according to Dr. Toby Litovitz, executive director of the AAPCC. Every dollar spent on poison control center services saves an estimated $7 in medical spending, mainly by eliminating the need for emergency department care for cases that can be managed safely at home.

The advisory group report recommends that the federal government pay 25% of costs, or its "fair share" according to the benefits derived by the federal government, to stabilize the present system

Long-range planning is underway through a study by Dr. Ann Zuvekas of George Washington University and sponsored by the Robert Wood Johnson Foundation to better streamline services offered by the U.S. poison control system and make them even more cost-effective. Meanwhile, the advisory group calls for immediate federal funding to enact certain initiatives. These include a national 800 number (see sidebar, page 13), a national public education campaign, standard protocols for commonly encountered toxic exposures, and an improved electronic surveillance system.

Jean Athey, PhD, of the Bureau of Maternal and Child Health, Health Resources and Services Administration, says, "This important report highlights the contribution to health care made by poison control centers—the lives they save and the cost savings they generate." The report is expected to lead to an enhanced and improved system for poison prevention.

For a copy of the report, contact Paul Burlack at NCIPC, MS F-41, 4770 Buford Hwy, NE, Atlanta, GA 30341-3724. ■

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1–800–POISON–1

A national 800 number for public access to poison control services is an idea whose time has come, according to Dr. Steven Marcus, director of the New Jersey Poison Control Center. He and the Texas poison control centers have spearheaded an arrangement with AT&T to respond with toxicological advice to calls directed to 1-800-POISON-1.

Dr. Marcus sees many benefits to a single 800 number, which will route callers to the center designated to cover in their region. For one thing, a common number may make promoting the service easier. He suggested that private industry is often willing to print a nationwide number on their own materials, thus saving costs for poison control centers.

Some poison control center directors are more cautious. Toby Litovitz, executive director of the AAPCC, said that, since many centers now handle most of their calls over local telephone lines, implementation of an 800 number would involve an added expense.

The AAPCC at their annual meeting this past September, passed a resolution supporting "the immediate move to a single national toll free telephone number for poison emergencies, controlled by the AAPCC, provided that adequate and sustained funding is assured such that the institution of this service does not adversely impact already financially-strained poison control centers."

Although logistical problems still remain, the initiative is gathering speed, with the 800 number being adopted in Florida, Michigan, Minnesota, Oklahoma, Oregon, South Dakota, and Texas.

PACT helps youths express anger, disagree without violence

African-American youths, particularly boys, are far more likely than other young people to be victims or perpetrators of violence. The *Positive Adolescent Choices Training* (*PACT*) program developed at Wright State University is teaching African-American children and teens how to express anger constructively, listen to negative feedback, and negotiate with peers when disagreements persist. Students are discovering that they can replace violence-provoking actions with behaviors that create less antagonism and lead to more satisfying and safer results.

"In America, where kids face so much danger and there are so many risks associated with relationships, it's much more dangerous for today's kids not to have these social skills than it was for previous generations," notes director of NCIPC's Division of Violence Prevention W. Rodney Hammond, PhD, who worked with psychology professor Betty R. Yung, PhD, to develop *PACT* and the companion curriculum *Dealing with Anger*. "We understand from the research that kids with poor social skills are very vulnerable to violence, and kids with good social skills tend to be protected from violence. So *PACT* gives children—particularly those most at risk—the skills they need to avoid becoming victims and perpetrators of violence," he explains.

The program cannot prevent instrumental violence, such as armed robbery, advises

Dr. Hammond, but it can help significantly with expressive violence, such as a fight that erupts during an angry conversation between teenagers on the street. Students learn that in such situations, they have the power to make choices and each choice has a different consequence. For instance, if a teenage boy steps on another student's foot, that student can choose to walk away, to shout at the boy, or to shoot him.

Givin' it, takin' it, workin' it out

PACT began in 1989 as a pilot project of Wright State University's School of Professional Psychology in cooperation with public schools in Dayton, Ohio. *PACT* serves as a preprofessional training program, because it is staffed by students enrolled in the university's doctoral program in clinical psychology. A parent component, staffed in the same way, has been developed and refined. A Wright State train-the-trainer program supported by funding from CDC, the Bureau of Maternal and Child Health, and the Department of Education has increased the potential for widespread growth. Forty people from fifteen states have been through the *PACT* trainers program.

Students participating in *PACT* attend at least 10 sessions, each lasting 60 to 90 minutes. Groups usually include six to eight kids of about the same age (*PACT* is most appropriate for adolescents, but the curriculum can be adapted for younger and older students). Groups can include boys only, girls only, or both boys and girls. The curriculum was designed for urban minority youths and works best with multiethnic or predominantly African-American groups. Each group has a leader with the same ethnical and cultural background as the members.

In the program's first component, students learn about the risks associated with violence and about street survival skills and ways to gauge potentially harmful situations. In the second component, they learn techniques for managing anger and gain an understanding of actions that can trigger anger as well as how their consequences will differ, depending on how they respond to anger. In the third component, students learn three social skills—known as *Givin' It*, *Takin' It*, and *Workin' It Out*—that have been shown to be effective in preventing violence.

- **Givin' It.** How to express criticism, disappointment, anger, or displeasure calmly and vent strong emotions constructively.
- **Takin' It.** How to listen, understand, and react appropriately to the criticism or anger of other people.
- **Workin' It Out.** How to listen to other people, identify problems and potential solutions, propose alternatives when disagreements persist, and compromise.

Photo courtesy of Wright State University/the PACT program

PACT students learn how to express anger constructively, listen to negative feedback, and negotiate with peers to avoid becoming victims or perpetrators of violence.

PACT is based on sound principles

One of the strengths of the *PACT* program, says Dr. Hammond, is that it is based on social learning and anger control theory and on research findings, which show that people learn social behavior by observing what other people do and what consequences their actions bring. Translating this theory and research into real life situations was challenging for program planners. "We knew that to be effective, the program had to be engaging and take into account how hard it is to do these skills in the real world," he recalls.

Therefore, *PACT* foregoes class lectures and instead uses interactive strategies that allow students to observe and practice positive behaviors in group meetings and at home:

- **Modeling.** During the training sessions, group leaders can set a good example for students by demonstrating appropriate behaviors that make up the skill being taught, and they can show videos depicting such behaviors. Modeling also can occur naturally when conflicts erupt at the group meetings. For example, if members of the group want to participate in an activity not on the day's agenda, they might use negotiation skills to lobby for what they want.

- **Role play.** Most students find that role play is awkward at first, so the group leader may introduce role play through games such as charades or have students talk through the steps or practice privately before the actual role play. The group leader also may assume the role of the main actor to ensure that early role plays are successful. All group members have the opportunity to play the main actor, and role play partners are mixed up to avoid repeatedly pairing the same two individuals.

- **Coaching.** During role play, the group leader gives youths verbal coaching (instructions, reminders, demonstrations, encouragement, and praise) as well as nonverbal cues (pointing to a skill step written on the chalkboard or raising a hand to signal that a step is being left out).

- **Feedback.** Following role play, the main actor comments on his own performance and how well he followed the skill steps. The rest of the group then responds, taking care to always provide positive feedback before giving any negative comments. Feedback must be detailed and constructive, not hostile or sarcastic. As a final step, the group leader critiques the feedback, helping members improve their ability to comment constructively.

- **Reinforcement.** Youths who exhibit appropriate behavior—either during the training sessions or in real life situations—are rewarded with reinforcements that can be verbal (praise), physical (smiles or pats on the back), or material (tokens that can be redeemed for goods or privileges).

- **Homework.** Members are asked to watch for opportunities to practice their skills at home and then report back to the group. If a student reports that he was unsuccessful at home, group members can talk about what he might have done differently.

Proof that PACT is working

Evaluations of *PACT* show that the program is helping youths avoid violence. An evaluation of the 1989–1990 school year

showed that *PACT* helped youths give and accept negative feedback, solve problems, and resist peer pressure. The results of a 1992–1993 case-control study revealed just how much *PACT* students had reduced violence in their lives:

- They had a 50% reduction in physical aggression at school, and they showed a greater reduction in levels of physical aggression than control group students.
- They had more than 50% fewer overall and violence-related juvenile court charges and a lower per-person rate of offending than control group students.
- Their behavior improvements were maintained 2–3 years after *PACT* training ended.

The program's success depends on numerous factors, advises Dr. Yung, who has served as program research evaluator coordinator for *PACT* since 1989. For example, schools must select group leaders who have a natural ability to communicate with youths and who are comfortable around them. "With some people, relating to kids is awkward. Kids can see through that and know if you're being sincere," she says.

To encourage student participation in the program, staff must give young people positive reasons for wanting to participate, Dr. Yung recommends. For instance, *PACT* is designed as a leadership club, and students are asked to join because their peers consider them highly influential leaders and look up to them.

When recruiting adults for the parent component of a program, appeal to their concerns about violence, she suggests. When you cast it that way—not in a way that implies a deficit on the part of parents—they want to get involved," says Dr. Yung. She also recommends making it as easy as possible for parents to attend training sessions: provide child care for parents with small children; meet at locations that are convenient for parents or offer them bus tokens if they have no vehicle; and provide snacks, because food gives the meetings a feeling of "just folks coming together to talk about a common concern" rather than "we're here for training." ■

California program targets "Healthy City"

The Golden State would seem to be heaven for bicycle riders. The mild climate means virtually year-round opportunities for cycling, and there is growing support for cycling as recreation and a commuting option.

The numbers confirm this assumption: Californians own 20 million bicycles, about 30% of all bicycles owned in the United States, and ridership is increasing. Unfortunately, this trend also puts the state's citizens at higher risk for injuries. Californians compose 12% of the nation's population, but account for 18% of bicycle-related fatalities. Typically, children are over-represented in bicycle injuries; in 1994, children aged 5–12 years made up 12% of the state's population, but accounted for 25% of serious bicycle injuries.

The statewide Bicycle Head Injury Prevention (BHIP) Program has responded to this situation by coordinating multiple strategies to (1) encourage law enforcement officials to promote and enforce California's bicycle helmet law and (2) foster efforts to reduce bicycle-related injuries, death, and related disability and costs.

Moreover, BHIP has focused intense efforts on a single community, the city of Pittsburg in northern Contra Costa County, to ensure that virtually every school-aged youngster receives education about the importance of wearing a helmet and has the opportunity to obtain one. The program's success—increasing the rate of helmet use among grade schoolers from 22% to 64%—demonstrates how concerted community effort and the commitment of key local leaders can make a difference, according to Valodi Foster, MPH, health education consultant for the California Department of Health Services, Emergency Preparedness and Injury Control.

A "Healthy City" gets healthier

Pittsburg was an ideal site to initiate a "saturation approach," said Ms. Foster. A blue-collar community of about 50,000 residents, the city had joined another community-based health program, the Healthy Cities Program, in 1992. This statewide project promotes a positive physical environment, vital economy, and supportive social climate by aiding in the planning and implementation of innovative programs. Thus, Pittsburg was already poised to recognize the value of a communitywide injury prevention project.

Further, Pittsburg was geographically suitable. Somewhat isolated from surrounding communities, it provided an ideal "laboratory" setting to measure the impact of an intensive intervention and contrast that with helmet use in comparable cities without such an intervention. And not least, the local program coordinator, Nick Carr, was a former teacher with strong ties to the school system and a committed cyclist whose enthusiasm helped launch and sustain the community effort.

Community partners central to the Bicycle Head Injury Prevention in Pittsburg (BHIPP) Project were the school and the local law enforcement agency. Certainly, it makes sense to target an intervention on the schools—that's where the kids are. But it's not as easy as it might sound to institutionalize a bicycle safety program in the schools, Ms. Foster noted. "Understandably, schools have mandates to address multiple subjects and issues, and some people tend to rank other social and health issues as more important." Developing personal relationships with teachers and principals helped shift awareness to the importance of preventing bicycle-related injuries, and coordinator Nick Carr was invaluable in forging those links.

Once the school system signed on, the BHIPP project provided training for every teacher at all seven city elementary schools and distributed packets containing information on the project, curriculum and resource information, and suggestions on how to promote bicycle helmet use. In addition, the project distributed more than 5,700 helmets and, in collaboration with the Pittsburg Police Department and the John Muir Medical Center's Injury Prevention Project, made presentations on bicycle and traffic safety to almost 5,000 children between the ages of 3 and 11.

Instilling community norms

The California effort is aimed at nothing less than making the wearing of bicycle helmets a community norm, said Ms.

Foster. "Realistically, we know that changing behavior—and maintaining it—takes time, so we in public health have to take the long view. It helps to look at changes in norms related to other issues, like tobacco use and drinking and driving."

Part of the BHIP approach is matching the message to the developmental stage and abilities of the target audience. Kids want factual information, Ms. Foster said, but they also need help in relating the information to their own experience and practicing skills to help cement their theoretical knowledge. Hence, the bicycle "rodeo" where kids have an opportunity to test their abilities to ride bicycles safely in a controlled but challenging setting.

The statewide project also adapted basic bicycle safety information into easy-to-read brochures for parents with low-literacy skills. The brochures are available in English and Spanish versions.

With the success of the Pittsburg project established, the California BHIP plans to expand the Pittsburg model to three additional communities in the coming year. ■

Resources you can use

Two new publications are available from the National Center for Injury Prevention and Control. They can be ordered through NCIPC's Internet home page: http://www.cdc.gov/ncipc/ncipchm.htm or by writing to NCIPC, Attention: Library Desk, MS K-65, 4770 Buford Highway, NE, Chamblee, GA 30341-3724.

Prevention of Motor-Vehicle-Related Injuries is a compilation of articles that appeared in CDC's *Morbidity and Mortality Weekly Report (MMWR)* from 1985-1996. A rich source of data and insights on prevention efforts, this publication organizes the reports according to topics: an overview of motor vehicle-related injuries as a public health problem, the economic impact of such injuries, drinking and driving, child occupant restraints and air bags, safety belts, bicycle and motorcycle helmets, pedestrian safety, and motor vehicle-related injuries in rural areas. A brief summary precedes each article. *This compendium was edited by Julie Russell Bolen, PhD, MPH; David A. Sleet, PhD; and Valerie R. Johnson.*

Data Elements for Emergency Department Systems, Release 1.0 (DEEDS) is a set of recommendations for standard data elements to be used as part of a record-keeping system in hospital emergency departments (EDs). Increasingly, EDs are the source of public health surveillance data for injuries, both intentional and unintentional. To foster consistency of information, CDC coordinated the national effort to develop an ED record system that led to these recommendations and involved representatives from dozens of organizations and agencies from the fields of emergency medicine, information management, and health care policy and research. Viewed as the starting point for such a system, this initial release of DEEDS serves as a technical reference on automating ED data as well as a compendium of data elements. *The committee was chaired by Daniel A. Pollock, MD, leader of the Acute Care Team in NCIPC's Division of Acute Care, Rehabilitation Research, and Disability Prevention.*

NRC Examines Violence Against Women

Violence against women is a significant social problem. Few people would dispute that statement—but many *would* argue about the scope of the problem, its causes, and, most important, approaches for prevention.

To address such information gaps in this relatively young field, Congress directed the National Research Council (NRC) to develop a research agenda to increase the understanding and control of violence against women. An expert panel examined published research findings on rape, sexual assault, and battering of intimate partners and also elicited the views of practitioners and researchers in the field.

Understanding Violence Against Women summarizes the panel's findings and recommendations. Published in 1996 by the National Academy Press, the 225-page book highlights the following areas:

- **Preventing violence against women.** More research is needed to better illuminate the causes of violent behavior against women. There is also a need for more rigorous evaluation of existing preventive interventions.

- **Improving research methods.** Many studies suffer from methodological flaws, resulting in inconclusive or conflicting findings. The panel called for development of tools to measure multiple types of violence against women, for consistency in definitions, and for improved studies that recognize the context in which women experience violence.

- **Building knowledge.** Noting that most theories on the "causes" of perpetrating violence against women are too narrow, the panel encouraged researchers to use multifactorial models. Another key recommendation is to develop national and community-level survey studies to measure incidence and prevalence of violence against women, with particular attention to surveys of racial and ethnic minorities, and other underrepresented population subgroups.

- **Developing a research infrastructure.** The panel made two main recommendations in this areas: (1) a coordinated federal funding and research strategy that focuses on primary prevention of violence against women and intervention with perpetrators and victims, and (2) establishment of at least three research centers within academic or other appropriate settings to support training programs, foster collaboration between researchers and practitioners, and provide technical assistance.

Guiding this NRC project were Nancy A. Crowell, study director, and Rosemary Chalk, senior project officer.

In response to the panel's recommendations, CDC and the National Institute of Justice have developed a joint initiative to address funding and programmatic priorities, according to Pamela McMahon, PhD, a researcher on NCIPC's Family and Intimate Violence Prevention Team, Division of Violence Prevention.

Understanding Violence Against Women is available from the National Academy Press, 2101 Constitution Avenue, NW, Washington, DC 20318. ■

C A L E N D A R

May 17-20, 1998 The Fourth World Conference on Injury Prevention & Control: Building Partnerships for Safety Promotion and Accident Prevention will be held in Amsterdam, The Netherlands. The deadline for early registration is January 15, 1998. For information, contact the conference web site at http://www.consafe.nl/conference/ or write Van Namen & Westerlaken Congress Organization Services, P.O. Box 1558, 6501 BN Nijmegen, The Netherlands. Phone: +31 24 323 4471. E-mail: reg.fowoco.nw@prompt.nl

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